hill sides,—all these properties are beneficial to agriculture, and they serve in the highest degree the interests of cultivation when they are to be found growing full of vigorous life upon the drainage slopes on the higher levels of the country. There are forests from which the removal of thorns does good, where the thorns have worked their capable purpose, and are required to give room to better growth.

(*G*)—ARTIFICIAL REPRODUCTION.

96. In the North Thána Division plantations are made upon open spaces inside the forest reservations. Lands which having been under cultivation at one time have been acquired for forests in virtue of their position inside forest reserves. 105 acres were newly planted during the year, which with the 2,038 acres of similar plantation at the close of last year makes 2,143 acres in all. Slips of the bhendi tree (Thespesia populnea) have been put down near the sea-coast, and seedlings of all kinds brought from neighbouring forests, where they had naturally come up, have been planted out both by forest guards and by hired labour. In the South Thána Division 271 acres were thus planted during the year. The hill reserves in Khándesh have been broad-casted, and on the plains lands have been ploughed and sown, and in places pits have been made and seeds sown in them. In the Násik Division the plantations are reported to be growing up so vigorously as to have become coverts for game of all sorts, which largely resorts to them. In the Dongargaon plantation in the Ahmednagar Division two dams, which were built across a stream to impound water for irrigating the area where exotics are grown and cultural experiments made, were unfortunately breached by the rain in the month of May, which came down suddenly before the masonry had set, and were able to bear the strain. The following table shows the plantation work carried out in one division—Ahmednagar—and is a sample of what is being done. 102½ khandis of seeds were collected by the forest guards.

No.	Ranges.	By Hired Labour.				By Forest Guards.			
		Ploughing whole Area.	Ploughing at 12 feet distance.	Pits at 5 feet distances.	Cost.	Area.	Pits.	Transplants.	Broad cast.
		Acres.	Acres.	Acres.	Rs. a. p.				
1	Nagar	12	...	85½	123 10 6	59	11,200	...	138
2	Párner	4½	...	...	57 2 3	48	16,000	1,000	330
3	Shrígonda ...	...	74⅓	...	40 11 0	416½	15,850	1,950	...
4	Karjat	21⅕	...	41¼	44 14 0	10	9,200	2,675	335
5	Jámkhed ...	...	80½	48½	35 0 0	46½	11,000	2,200	2,393⅓
6	Shevgaon ...	...	...	24	10 0 0	490	10,600	2,200	193
7	Nevása ...	3	...	...	49 12 0	10	5,000	...	200
8	Ráhuri	1	...	...	8 4 0	11	7,200	...	2,750
9	Kopargaon ...	...	...	86¾	48 11 3	14	7,000	1,400	210
10	Sangamner ...	...	15	40 Broad cast.	18 13 3	223	19,005	20	3,902
11	Akola	...	...	263½	24 12 0	95	24,600	5,025	16,036
	Total ...	41 7/10	169 5/6	589½	461 10 3	1,423	1,37,255	16,470	26,487½

97. In the Poona Division the forest guards made 35,625 pits, and sowed seeds in them upon the hill sides; the seed of the hirda tree (Terminalia chebula) was sown to a large extent, every forest guard sowing 100 pits. By hired labour 1,999½ acres were ploughed and sown, and 89,577 acres were pitted over and sown at a total cost of Rs. 977-3-0.

98. 784 acres of fresh ground were planted in the Sátára Division by hired labour in 15 forest reserves situated in 9 ranges, and 19,275 acres were sown broadcast and otherwise by forest guards. 7,933 bámbus were planted, out of which 20 per cent. were said to be surviving at the end of the hot weather, and the number of seedlings alone is given at 3,25,495; but reliance cannot be placed upon this enumeration, and the Conservator is of opinion that statements of the kinds are generally inaccurate, and should be avoided. Teak transplants

put down upon the Mahábaleshvàr plateau have not succeeded. In the Sholápur Division 1,001$\frac{2}{40}$ acres were treated by hired labour under the systems of full-ploughing, furrow-ploughing, pitting or dibbling, drilling. The cost of carriage of seeds from other parts of the country amounted to Rs. 225, and the cost of labour to Rs. 1,141-14-0. In addition thereto, 85 forest guards planted in pits over 181 acres and broad-casted 4,521 acres. No extensive plantations are to be found in the two Gujarát divisions. In the Surat Division 1,302 acres were planted up inside the reserves at a cost of about 3½ annas the acre, and in the Panch Mahál 148 acres of blanks were planted by forest guards.

99. The results of artificial plantations are not everywhere the same. In places where the soil is good, and the rainfall seasonable, success has been highly satisfactory, while in other places failure has to be chronicled ; but the success or otherwise of such plantation works can only be realised after a period of years, and is much dependent upon the treatment the lands receive subsequently to their planting.

100. There is nothing interesting to mention regarding experiments with *exotics*.

101. The divi-divi, carob, Pithecolobium saman, varieties of eucalypti, Grevillea robusta, mahogany trees, &c., which had established themselves in former years, are growing well. Some mahogany seed received during the year was experimented with ; and while the quantity sown in some divisions germinated only to die ; in others—Násik for choice—seedlings are doing well. The total expenditure of the circle under Plantations A *VIII* (*d*) amounts to Rs. 7,461-3-0.

(*H*)—COMMUNICATIONS AND BUILDINGS.

(*a*)—Roads and Bridges.

102. There are several reasons why no great works by the Forest Department in the construction of roads and bridges have to be recorded. In the first place, this Presidency has, since it has come under British rule, been opened out in all directions by roads, new roads have been constructed from year to year by the Public Works Department and the Local Funds Department to feed railway stations, bandars of export to connect centres of trade and to facilitate commerce ; and, possibly, in the matter of roads the Bombay Presidency is in the forefront of such civilization in the British Empire.

103. Then, again, cart tracks abound in all directions, traversing forests and making their remotest spots accessible. Of course there are forests and portions of forests not yet approachable by wheeled carriage, but the time for remedying this defect has still to come. The existing cart tracks serve all ordinary purposes of forest exploitation ; they might be converted into metalled roads at considerable cost, but the advantage of this being done upon any extended scale is questionable, for the cost of annual repairs in the country of a heavy rainfall would be a considerable item in the budget, while there might not be a proportionate increase of receipts by the improved communication. Further, one-half of the surplus revenue of the Forest Department is given to the Provincial Services budget, at the expense of which many miles of roads, which are of use to the Forest Department, are constructed by officers of the Public Works Department. Lastly, Divisional Forest Officers have their attention and time fully employed in managing the ordinary business of their forests without undertaking work which is not altogether in the regular groove of their professional education or business. And, however strong their desire may be to construct roads, the fact remains that forest budget sanctions are not generally lavish of funds ; indeed, it is only with great care and supervision that the expenditure incidental to the protection of the forests, to organization, to plantations, to felling and exploitation of material to produce revenue is kept within the sanctioned limits.

104. In the Thána Division the road leading up to Tungár hill has been repaired departmentally, and a cart road has been made to the forest bungalow at Párol, in the Bassein Range. And a road, 1 mile and 1,220 feet in length, over the Satevli Khind has been constructed by the Public Works Department, at the instance of the forest officers, to open out the forests of the south-western portion of the Bassein Range to a railway station, to bandars of export, and to